Serapias Helleborine in Buffalo and Vicinity

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No mention is made of Serapias Helleborine *L.*, under any of the names formerly employed, in the catalogue of "The Plants of Buffalo and Its Vicinity" published by David F. Day in April 1882, but in the preface to the first supplement the following is recorded with evident satisfaction: "Probably the most interesting addition now made to our list of plants is of that remarkable orchid Epipactis Helleborine *Irm.*, found within the limits of our city, in July, 1882: —its second discovery in America."*

Today, fully forty-seven years after, Serapias Helleborine is still thriving in Buffalo on the very site of its original discovery. Furthermore, a mile or more from this station and still within the city limits, this "remarkable orchid" has succeeded, to no small extent, in escaping the fate of so many other wild plants that have vanished in the wake of population increase and real estate development; in fact, it has here survived, in some instances, under conditions so adverse as almost to bid defiance to some of our most common and aggressive weeds.

Elsewhere in Erie County, in the wooded tracts and in more natural surroundings, it grows rather widely distributed under diversified soil conditions. It is easily the most common of our orchids. The plant is known to occur also in some of the adjacent counties, although these have been less thoroughly explored.

In the catalogue part of the supplement already referred to, the original Buffalo discovery is recorded as follows:

> "Epipactis Helleborine, var. viridens *Irm.*
> "Near Scajauquady's Creek, Buffalo:—The second known station of the species on the American continent. Here first found by Miss Edna M. Porter, July 1882. Equivalent, according to Gray, to E. latifolia. . . . . "

Thereupon follows a generic description of Epipactis transcribed from Watson's Botany of California, as well as a specific description of the plant as found in Buffalo. The concluding paragraph is significant:

* Bulletin of the Buffalo Society of Natural Sciences, Vol. IV, p. 256.

"In our station certainly indigenous. About 200 individuals were counted, all growing within the space of a few hundred feet along a northerly hillside, from five to thirty feet above the creek. The diversity of color, which the flowers on different plants display, indicates that the variety, viridens, has no stability of character."

The foregoing positive statement as to the indigenousness of the plant here found stands in marked contrast with the now generally accepted view that the species has been "probably introduced."

As might be expected, this interesting addition to the flora of Buffalo was the subject of considerable contemporary study and investigation. Thus, experiments conducted by Miss Porter aseertained that a certain wasp, determined at the time as Vcspa diabolica, was an active pollinating agent. At a later period, solicitous individuals, fearing that the plants might become extinct at the original station, transplanted roots to some outlying localities. In this manner, human agency became a contributing factor in distribution, although the weight of the evidence points to several natural centers as sources of distribution at least equally important.

The discovery was made in Forest Lawn Cemetery, which, together with Delaware Park to the north and northwest, was originally a forested area. A visit to this, the original station was made during the fourth week in September of the past season. Forty-seven years had naturally wrought considerable changes. Graves and monuments to the dead had encroached to the very shoulder of the hillside, and down below, on the other side of the creek, the grass was mown down to almost the water's edge. However, along the thus isolated wooded hillside, Serapias Helleborine was still found growing, if not in its erstwhile profusion, at least in ample numbers and in a partly vigorous state. Among the trees observed there, were oaks, maples and beeches. Some withered remains of a typical Spring wood flora were still in evidence, and at this time of the year Solidago latifolia was flowering in conspicuous masses.

About a mile to the northeast of this, the original station, and adjacent to Delaware Park, there was formerly a wooded tract which up to twenty years ago still had the aspect of an

"oak grove." Gradually this section, the Amherst-Parkside district, became studded with houses, although the trees were spared as much as possible. Ten, or even five years ago, Serapias Helleborine was conducting itself there in a rather wanton and capricious manner. It fairly obtruded itself on the observing eye. Asphalt pavements and flagstone sidewalks, indeed, smothered it, but in the uncut grass between sidewalk and curb it persisted. It could hardly cope with the lawn mower, but in garden plots alongside houses, and under shrubs, and along hedge rows it secured a new lease of life. Under these congenial conditions, some unusually vigorous plants developed, such as are still to be found occasionally to this date. In unfavorable situations it has clung tenaciously to the hard, clayey soil.

During the fourth week of August last, half a dozen or more specimens were observed on Amherst street growing in hard, barren clay alongside the sidewalk and under the iron fence of Delaware Park. A fruiting specimen was dug out with a *chisel*, foreknowledge of the character of the soil having suggested the advisability of using this implement instead of an ordinary hand-trowel. On the other side of the street, occupied by dwellings, there was still a vacant lot with some of the original vegetation surviving amid piles of stone and building debris. Several specimens were observed there growing apparently on mounds of barren clay, but digging with the chisel revealed the fact that the plants had forced their way up, from the original ground level, through six to ten inches of compact clay that had been dumped overhead.

Thus, in the forty-seven years since it was first reported Serapias Helleborine has persisted within the city limits of Buffalo with remarkable vitality and tenacity. Gradual reduction of forested areas, the works of man—clearing, filling, grading—by no means doomed it to extinction. In the Amherst-Parkside section, it actually seems to have experienced a regeneration or re-invigoration as open places were created and added sunlight became available. Five or ten years ago, an observer unfamiliar with antecedent conditions, seeing the plants there weed-like in aspect and habitat, might have drawn conclusions not altogether warranted.

In the rest of Erie County, as already intimated, the species is well distributed and fairly abundant, with indications that

the same holds good for at least some of the adjacent counties. It occurs in rich woods, open woods, edges of woods, thickets and clearances, but, so far as observations go, it is invariably associated with woodlands, past or present. Where it now grows in more open situations, it seems either to have spread from woods or to have survived long after deforestation. What Wiegand and Eames say concerning the habitat of this plant in Central New York, in the Cayuga Lake Basin, applies in no small measure to its manner of occurrence in Northwestern New York, namely: "Unlike most adventive plants, it occurs usually in wild places that little suggest such introduction." Its occurrence also in Erie County and adjacent territory in situations little suggesting introduction from abroad, tends to revive the issue as to its indigenousness, particularly in view of the positive pronouncement, made at the time of its first discovery in Buffalo, that the species was "certainly indigenous."

In the matter of habitat, the plant does not appear to prefer any particular kind of association, being equally at home in beech, oak, or mixed woods. In rich moist woods it seems to shun wet situations and favor hummocks, knolls or slopes. It is frequently found on wooded hillsides, where, on more horizontal projections, soil carried down from above may accumulate. In fact, a moderate superdeposition of soil has been observed to be a decidedly favorable factor in almost any situation. It would seem that the underground portions of the plant have a certain inherent vitality.

Apparently indifferent to the chemical composition of the soil, Serapias Helleborine grows in the humus of rich woods, along shaley ravines, in clayey loam, or on limestone substratum. At Harris Hill, Erie County, it is found in the earth-filled crevices of a limestone outcrop. At Indian Falls, Genesee County, it has been observed along a hillside in the talus deposited between fragments of limestone. Several slender and almost prostrate specimens were here found growing from underneath limestone slabs, which had to be overturned to reach the roots. Occasionally plants are encounterd in rather unexpected situations, as in the town of Amherst, Erie County, where a little colony was discovered growing in black muck, in a copse of trembling aspens overshadowed by a solitary elm and surrounded by swampy terrain, with evidences about of more extensive forestation in the past.

Observations in the field and inspection of plants as they were being put into the press, have disclosed some evidences of insect depredation, but to no marked degree. One, indeed, encounters numbers of non-fruiting specimens, but whether these were retarded by drought or affected by insects, has not been ascertained. At any rate, not far off from plants thus affected good flowering and fruiting specimens may usually be obtained without much trouble. In a few instances, cobwebby deposits have been discovered on the fruit and the foliage, and on one or two plants put in the press small spiders were detected. On the whole, however, the adverse effects of insect visitation seem to be negligible.

With so many elements entering into the matter of the plant's ability to persist, increase, and spread, it is difficult to assign a predominant rôle to any single agency. A combination of factors and circumstances obviously comes into play. All in all, Serapias Helleborine, as occurring in Buffalo and vicinity, is still to present-day observers, in a more extended and perplexing sense, what it was to those who almost half a century ago first welcomed it as "that remarkable orchid."

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